**Africa RISING, East and Southern Africa (AR ESA) Review: Tanzania and Malawi**

(Briefing note, 16th March 2015)

1. **The review:** The review team (RT) has made an assessment of AR ESA’s (Tanzania and Malawi) work to date within AR’s programme level framework evaluating progress towards the expected outputs and outcomes and will provide recommendations to meet the challenges being faced.

The review process included literature review and email/telephone/skype communication with some stakeholders. Field visits included two weeks in Tanzania and one week in Malawi immediately prior to a briefing. During the review discussions were held with AR partners and research sites were visited in a number of villages in each District covering each agro-ecological zone (AEZ) in which AR is working.

We would like to acknowledge the support, enthusiasm and openness of all AR partners and implementation staff in the review process. Many of their own ideas on the way forward will be incorporated in our report.

1. **Purpose of this brief:** The brief is intended to provide partners / management with an overview of our initial assessment. We have purposefully not included detailed comment of AR ESA’s many achievements, but have indicated the main challenges and suggestions for the way forward.

**Achievements** include the establishment of a wide range of partnerships, improving stakeholder collaboration, addressing priority bio-physical constraints concerning genetic improvements, crop including vegetable, soil fertility and other natural resource management practices, livestock fodder production, poultry, post-harvest and nutrition activities, as well initiatives linking AR ESA with bilateral USAID-funded development activities.

In all Districts, variations of a “Mother-Baby- Granddaughter/spillover” approach are being successfully used providing opportunity not only for participatory research, but importantly for demonstration and training thereby linking R & D activities. This is encouraging further farmer testing, demonstration and adaptation through farmer-to-farmer extension. Links between AR ESA with USAID bilateral projects (NAFAKA and INVC) will be invaluable for widening the learning and scaling the approaches (Output 3).

1. **AR ESA and its implementation strategy:** Three year’s work have almost been completed, with 18 months remaining, encompassing a single cropping season. In the first year USAID requested tangible results and IITA was asked to implement “jump start” projects. These included a number of studies, community, value chain and stakeholder analyses, seed production, technology identification before target areas had been identified. AR’s subsequent programme design reflects four outputs aimed at achieving a common outcome of “providing pathways out of hunger and poverty through SI farming systems” contributing to impact of “increased adoption by smallholder farmers of productivity increasing SI innovations”. AR ESA has developed its own project framework that contributes to AR programme outputs and outcomes. Within this framework, Tanzania (Babati, Kongwa and Kiteto) and Malawi (Dedza and Ntcheu) have agreed work packages, themes and clusters aimed at delivering project outputs, each using slightly different frameworks reflecting different institutional approaches.

**Framework challenges**: It is recognised that process-led projects do not lend themselves easily to either planning or review. Although the AR ESA logical framework has provided a basis for this review, greater clarity is needed on how work plans and themes contribute to AR programme outputs, outcomes and impact.

**Way forward:** The ESA logframe should be updated with clearer definition between outputs and activities with time bound targets that reflect both quality and quantity with“theory (or hypothesis) of change” used to inform activities and assumptions. In particular, indicators, baselines and targets need identifying, confirming or revising, given the experiences of the last three seasons. These need to include change in the condition and position of women and consider how major assumptions/risks can be addressed. This will help in ensuring better understanding by scientists on how outputs and country/district themes contribute to project outcome and impact. It will also help in improved planning, implementation and review for the final stages of the project, providing vision for the future and building blocks for a second phase.

AR ESA’s implementation strategy was designed to address community-identified challenges and opportunities through development-orientated R4D and innovation platforms involving partners from public, NGO and private sectors as well as community based organisations. This has helped to encourage community engagement, joint planning, joint experimentation and evaluation, ensuring buy-in and ownership by partners, using appropriate participatory research and extension tools. In Malawi existing policy with stakeholder panels at District, Extension Planning Area (EPA) and community level are improving invaluable in this process, as are village councils in Tanzania.

**R4D Challenges:** Although R4D platforms are now being established in Tanzania, their intended role is only now becoming operational. In Malawi District stakeholder panels are providing a basis for R4D platforms, In both cases these need to be seen as more than a dissemination approach, but also actively involved in identifying challenges, opportunities and seeking solutions.

**Way forward:** The process of R4D platform involvement at community and district level (with their executive or technical committees) supported by relevant commodity-based value chain partners requires to be accelerated so that partners from public, NGO and private sector can play their roles. This requires facilitation ideally by local language speakers, followed by monitoring and lesson learning. R4D/IP agendas should follow a learning cycle step-wise process (engagement, planning, implementation, learning and review), with each cycle leading into and building on the next. Existing commodity value chain studies should be revisited and other priority commodity studies in line with R4D priorities should be undertaken to identify possible budget-neutral interventions. These can act as catalysts for the establishment of sub-groups of R4D platforms or stand-alone commodity-based innovation platforms. Where platforms already exist, such as a national “Grain Legumes Platform” in Malawi, AR ESA’s contribution will help to strengthen such platforms, without incurring additional cost and ensuring sustainability.

**Scaling challenges**: As soon as on-farm research commences, the scaling process starts. The involvement of existing farmer groups in research activities and building on past development challenges can speed scaling.

**Way forward**: The vision of scaling pathways should recognise and build on existing farmer groups and networks (formal or informal), as well as new ones. At the same time, social and economic including gender analysis of best bet technologies requires strengthening, considering alternatives for different farmer typologies for low, medium and higher input technology options.  This includes gender disaggregated data on household decision-making and labour utilization.

1. **Research outputs.** There are four interrelated programme outputs each organised initially as work packages and more recently combined to form a number of interrelated themes and clusters. These vary between countries, districts and sites forming the basis of this review. AEZ include: Babati, high and medium altitudes, bi-modal rainfall sub-humid zone; Kongwa and Kiteto, low altitude, semi-arid unimodal rainfall semi-arid zone and; Malawi (Dedza and Ntcheu), high, medium and low altitudes, unimodal rainfall semi-arid and sub-humid zones.

**4.1 Situation Analysis and Program-wide Synthesis.** This programme output comprises four key activities expected to: i) characterise target sites and, ii) typology of farmers, iii) assess the potential impact of appropriate technologies through ex-ante evaluation, iv) establishment of R4D/ Innovation platforms.

***Challenges:*** Some of the activities under this output remain to be fully addressed with challenges including i) a lack of readily available base-line data at the start of research activities, unless specifically undertaken as activities for Output 2, ii) characterisation of farmers recently being completed and consequently not yet being used, iii) lack of a comprehensive inventory of potential technologies with ex-ante cost benefit analysis and, iv) R4D District platforms remaining at early stages of development with links to community/village levels platforms requiring to be strengthened. Commodity-based IPs derived from RD4 platforms have not yet been considered to address value chain challenges and possible interventions with research priority being given to bio-physical production and post-harvest constraints.

***Ways Forward:*** Platform purposes, functions and plans need to be further clarified and agreed by participants through facilitation during establishment and early operation. These should build on existing structures for stakeholder participation and not create new ones. Clear links between District (strategic) and community/village (operational) levels need to be developed. Existing commodity value chain studies should be revisited to identify cost-effective interventions that can be supported by other partners.

**4.2 Integrated Systems Improvement.** This outputcomprises the main thrust of the research with four interlinked project research work programmes and themes targeting development, introduction and adoption of innovations that, i) increase resilience and productivity of crop-livestock farming systems, ii) crop-nutrition and water-efficient innovations, iii) availability and consumption of safe and nutritious food products and, iv) emerging agricultural challenges. These include interrelated systems for crops including vegetables, livestock, natural resource management, food storage and mycotoxin management, nutrition and food processing and R4D platform development. These vary between countries and districts depending on agro-ecology and resources available for the research. Achievements, to be detailed in our report, have been considerable. This brief identifies the main challenges, way forward and opportunities by Work Theme/Programme in Table 1 on the next two pages.

A “Mother-Baby-Granddaughter/spill over” participatory research and extension approach is being successfully used in all sites for testing crop varieties and management practices. Farmer groups have been established by researchers with Lead Farmers (LFs) providing land, the groups the labour and research the inputs and design protocols for Mother trials. These are being used as a focus for learning through training, field days and exchange visits. Baby trial farmers are often farmer group members provided with seed and encouraged to test varieties and management options. Variations on this approach have been noted. In some cases group farmers are paid for their labour, for others this is provided in exchange for knowledge and seed. Babati is using a voucher lottery system, allowing randomization into different typologies, to provide seed to other farmers rather than to group members.

A participatory budgeting (gross-margin and partial budget) approach needs to be initiated with farmer groups to establish the viability and acceptability of alternative technologies, systems and enterprises.

* 1. **Scaling and Delivery of Integrated Innovation.** Although there are presently no WPs associated with this research output, there is need to address:
* Communication, being the most basic requirement for the success of an R4D platform & capacity building is required to help players acquire skills to interact in the platform and undertake technical activities.
* Research on appropriate scaling approaches in addition to working with development partners. This should include “Networking Mapping” of babies and granddaughters to establish who is using which technologies, why and how these are being modified by different typologies of farmers.
* Building on links with bilateral USAID-supported development partners, NAFAKA in Tanzania and INVC in Malawi. These provide opportunity to support and learn from their scaling approaches.
* Addressing farmer requests for “handouts” through provision of knowledge and facilitation by R4D platform facilitation.
  1. **Monitoring and evaluation.** Although IFPRI are responsible for this Output, primarily to measure impact, it is recognized that their baseline would have provided valuable information, had it been available at project initiation. AR ESA needs to be undertaking M&E activities to ensure that learning is taking place. This includes:
* Undertaking studies on how technology is incorporated into existing household livelihoods, comparative case studies of household food allocations, household labour allocations, including the use of hired labour following the uptake of SI systems.
* Assembling socially and gender disaggregated data on household participants.

***Cross cutting issues.*** These include:

* Undertaking appropriate value chain analysis to identify challenges and opportunities for possible intervention.
* Ensuring gender and youth issues around technologies especially labour and utilization are addressed during participatory evaluation occasions.
* Ensuring data is collected that allows participatory cost-benefit and gender analysis of the trials.
* Providing policy position / advocacy papers for Community, District, Regional and, National platforms on serious NRM problems outlining causes, future consequences and strategies for resolution.

**Table 1:** Research Output 2, challenges, ways forward and opportunities

| **Integrated systems** | | **Babati** | **Kongwa and Kiteto** | **Malawi** |
| --- | --- | --- | --- | --- |
| ***Crops*** | *Challenges* | *Maize-legumes variety and fertiliser trials including soil nutrient cycle and aflasafe* | *Genetic intensification and crop management* | *Doubled up legumes, rotations, maize-beans, tephrosia,* |
| * Need to ensure timely arrival of inputs and planting * MLN tolerant varieties still under development * Arrangements with farmers in case of research failure * Lack of socio-economic analysis * Seed availability with most farmers using local seed * Maize marketing concerns | * Improved management practices are not being used in variety trials * Serious soil erosion in trial areas as a result of landscape and road run-off * Seed shortages for farmers * Lack of interest by seed companies in legumes | * Need for closer integration between AR ESA research activities * Overlap with other soil fertility research initiatives) * Need for Aflatoxin control management practices * Seed and inoculant availability |
| *Ways forward* | * Develop a number of stepwise recommendations based on low, medium and high productivity options that reflect farmer typologies * Map and learn from adoption pathways * Involve Minjingu fertiliser factory and agrodealers, encouraging them to establish demos close to points of sale * Consider other priority crops – potatoes? | * Other crops - sunflowers | * Use of dambos for dry season production including B seed production in dambos * Map and learn from adoption pathways * Value chain analysis to identify challenges, priority interventions addressed by alternate partners. * Link with existing National Legume Value Chain as both an uptake pathway and to establish research priorities * Other crops – cotton, tobacco? |
| ***Vegetables*** |  | *Baseline, sensitisation, demos & training,* |  |  |
| *Challenges* | * Seed availability * Pest problems |  |  |
| *Way forward* | * CB seed production (QDS) need to involve platform and involve TOSCI |  |  |
| ***Livestock*** |  | *Fodder establishment* | *Fodder establishment / Indigenous poultry* | *Fodder for dairy cows* |
| *Challenges* | * Inappropriate varieties of tree and legume fodders in some AEZ * Napier disease concerns in nurseries * Host farmer wishing to remove Napier from run-off trials (farmer selection?) * Manure/compost and urine availability * Issues of mechanisation | * Inappropriate fodder grass for AEZ * Livestock feed resources still to be addressed * Little work to increase manure production * Management problems -mortality of young chicks | * Need for fodder ration investigation(Poor livestock housing and management practices * Little integration other SI components * Concerns about livestock damage in dry season * Little evidence of LUANAR in activities * Dairy value chain analysis to establish interventions required |
|  |
| *Way forward* | * Opportunities to establish feed trials for milk production (cows and goats) * Identify and address livestock health problems. | * Opportunities to establish feed trials for milk production with existing cow and goat groups | * Feeding trials * Consider similar for goats/chickens |
| **Natural Resource Management** |  | *SWC, landscape environmental research* | *Run-off trials (flat, ridge, rip), fanya juu* | *Ridges / incorporating crop residues* |
| *Challenges* | * Long term nature of research * Demonstration run-off & soil loss trials | * Likely to be wiped out in intense rainfall events * Conflicts between crop farmers and pastoralists * Mechanisation/labour issues for ridge making | * Opposing views of CA – * Other soil fertility projects in same EPAs / Villages with no clear coordination between researchers |
| *Way forward* | * Need for short term intermediate outputs such as distance between contour bunds, maintenance and catchment management) * Rainwater harvesting demos close to trials | * Need for policy position paper to advise platforms and policy makers at all levels * Rainwater harvesting demos close to trials | * Improving researcher collaboration with different projects * Realistic appraisals of gender-segregated labour requirements. |
| *Challenges* |  | *Seedling establishment* |  |
|  | * Further replication required |  |
|  | *Wind breaks (agroforestry species)* |  |
|  | * Farmer desire to use for fodder * Labour requirement for maintenance needs * How to protect fodder species in dry season |  |
| *Way forward* |  | * Sensitisation through R4Ds with a view to bye-laws and other restorative action |  |
| **Post-harvest storage, value addition and mycotoxins** | *Challenges* | *Maize de-shelling, drying and storage* |  |  |
| * Affordability/ credit/ ownership * Scaling up triple bags/availability * Maize value chain interventions |  |  |
| *Way forward* | * Need for ex-ante models of ownership and profitability * Partial budget analysis * Training in warehouse and business management |  |  |
|  |  |

***Food processing and nutrition*.** Establish baselines for monitoring and assessing change in nutrition status under different circumstances. This could include a joint research program across Tanzania and Malawi focused on children under two year’s old, pregnant women and different household categories. This will require close links between AVRDC, IITA, SUA and LUANAR in association with NAFAKA, Tuboreshe Chakula and INVC.

1. **Data collection and use**

***Communication and knowledge management:*** Much of the communication strategy to date has been targeted at higher level stakeholders, e.g. donor. Consideration now needs to be given to targeting other stakeholders including national stakeholders, R4D platform partners (District, Village, men, women and youth) and farmers and strengthening links to reinforce the programme and project objectives and success stories. Particularly important is feedback on research results and best practice guidelines in a form easily understood and communicated to farmers.

**AR data base:** Despite training being provided on the use the data storage/retrieval system, some scientists report being unaware of how it operates. This requires reminders of appropriate protocols and ongoing capacity building, especially where staff changes have occurred. Consideration also needs to be given to how CG data, NARS and University generated data can be incorporated (or not) into AR’s data base.

1. **Partnership and management**

***Partnerships****.*Absence of base-line institutional analysis at community level has meant that past experiences may have been missed and important partners excluded. This includes Farm Africa in Babati, INADES in K & K, and other research projects in Malawi. Private sector partner representation is likely to improve when they see benefit from participation.

***Management****:* Issues which need to be addressed include:

* Addressing procedures for contracting and financing arrangements between partners to ensure that funding delays do not cause late starts to seasonal activities. This means addressing arrangements related to fund transfers especially when pre-financing by NARS is not possible.
* Ensuring team work that is committed to AR outcomes and impact that holds team members mutually accountable.
* Improving coordination, communication and networking mechanisms at individual research sites through regular meetings and seminars
* Improving links / communication with ARIs in Tanzania esp. HQ, and DARS in Malawi.
* Where NARS have limited capacity greater use of local regional consultants should be considered.

1. **Availability of human resources for successful implementation:** It is recognised that capacity limits are present at all levels, many of which are being addressed, while others will require priorities for the way forward to be established. An impressive number of students are participating. If funding allows consideration should be given to providing coordinators in each area to support building and facilitating partnerships, communication and networking, opening closed doors and ensuring effective links with USAID-bilateral projects.
2. **Contribution to the Humid Tropics and Dryland CRPs:** It is recognised that IITA is required to map AR ESA into their Humidtropics (HT) CRP, despite the fact that much of AR ESA lies within semi-arid and sub-humid agro-ecologies. It is however recognised that AR ESA can learn from and contribute towards the HT research process and vice versa. AR ESA’s contribution to USAID’s “Feed the Future” is recognised and maintaining AR with a separate identity within HT is likely to be important.

**In conclusion we would like to confirm the many achievements made in addressing Output 2 with the main challenges addressed relating to Outputs 1, 3 and 4.**